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# Recommended Replenishment Rates for the *Kodak X-Omat* M43, M43A, and Clinic 1 Processors

Below are the current processing recommendations for Kodak medical radiographic films with *Kodak* RP *X-Omat* Developer Replenisher and *Kodak* LO *X-Omat* Fixer and Replenisher. When using external replenishment tanks with floating lids, mix only the volume of developer solution needed for 2 weeks.

**Note**

The replenishment volumes outlined in the table are recommendations. The actual volume of replenishment may vary 5 mL. To ensure the optimum replenishment rates and stable processing conditions, you should monitor the process sensitometry.

For high film volumes, the developer head of the replenishment pump must be mechanically adjusted to provide the correct volume of developer replenishment. Set the replenishment rate for the fixer by following the calibration routine that uses the Film Sensors to adjust the volume of replenishment. **Only a qualified service person should make this necessary mechanical adjustment.**

**Recommended Replenishment Volumes for Developer and Fixer**

| Processor Model | Use Condition | Average Amount of Film/8 Hours of Processor Operation | Developer Volume | Fixer Volume | Ratio Fixer/Developer |
|---|---|---|---|---|---|
| Clinic 1<br>Length Replenishment<br>(35 cm x 43 cm only) | High<br>Medium<br>Low | 75 sheets or more<br>50 sheets<br>25 sheets or less | 60 mL<br>80 mL<br>100 mL | 85 mL[1]<br>100 mL<br>120 mL | 1.42<br>1.25<br>1.20 |
| Clinic 1<br>Length Replenishment<br>Average Intermix | High[1]<br>Medium<br>Low | 115 sheets or more<br>80 sheets<br>40 sheets or less | 50 mL<br>65 mL<br>80 mL | 70 mL[1]<br>85 mL[1]<br>100 mL | 1.40<br>1.31<br>1.25 |
| M43, M43A<br>Area<br>Replenishment | High<br>Medium<br>Low | 75 sheets or more<br>50 sheets<br>25 sheets or less | 60 mL<br>80 mL<br>100 mL | 85 mL[1]<br>100 mL<br>120 mL | 1.42<br>1.25<br>1.20 |

**Using Developer Starter**

When filling the processor with fresh developer replenisher, do the following steps to provide thorough mixing of the starter with the replenisher.

1. Fill the developer tank half full with developer replenisher.
2. Add 267 mL (9 fl oz) of *Kodak* RP *X-Omat* Developer Starter.
3. Add the remaining replenisher.

**Using the Flooded Replenishment Option**

The "Flooded Replenishment" option is designed for low-film volume (less than 20 sheets of 35 cm x 43 cm film per 8 hours) applications. **This option should only be configured by a qualified service person.** *Kodak* RP *X-Omat* Developer Starter is added to the replenisher tank at the rate of 89 mL (3 fl oz) per 3.8 litres (1 gallon) of developer replenisher. This ensures stable

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processing solutions. Fill the processor tanks with this solution from the replenisher tanks; however, do **not** add extra starter to the processor developer tank.

The Clinic 1 Processor is factory set in flooded replenishment mode. Flooded solution replenishment rates are **100 mL for developer** and **120 mL for fixer**. The M43, M43A, and Clinic 1 Processors will deliver these volumes every 24 minutes to maintain optimum processing conditions.

**Processing Temperatures**

The developer default temperature is 33.9 C (93.0 F). The allowable temperature range for the incoming water supply is 4 - 29 C (40 - 85 F).

**Processor Status - Blink Patterns and Wait Conditions**

| Condition | Ready | Wait | Service |
|---|---|---|---|
| Processor ready | On | Off | Off |
| No error, film being fed | On | On | Off |
| Developer is over the set temperature | Off | Blinks 1 time | Off |
| Developer is under the set temperature | Off | Blinks 2 times | Off |
| Dryer is under the set temperature | On | Blinks 3 times | Off |
| Top cover is not seated properly | Off | Off | Off |
| Diagnostic switch error | Off | Off | On |

**Service Error Conditions - Blink Patterns**

| Error Condition | Ready | Wait | Service |
|---|---|---|---|
| Circuit board error | Off | Off | Blinks 1 time |
| Loss of air flow | Off | Off | Blinks 2 times |
| Invalid air flow condition | Off | Off | Blinks 3 times |
| Unable to determine the developer temperature | Off | Off | Blinks 4 times |
| Dryer is over temperature | Off | Off | Blinks 5 times |
| Unable to determine the dryer temperature | Off | Off | Blinks 6 times |
| Film detector LED error | Off | Off | Blinks 7 times |
| Developer over set temperature range | Off | Off | Blinks 8 times |
| Developer under set temperature range | Off | Off | Blinks 9 times |
| Dryer under set temperature range | Off | Off | Blinks 10 times |

**Setup Options**

| Setup Option | Factory Setting | JUMPER | Factory-Set JUMPER Position |
|---|---|---|---|
| Replenishment (Normal or Flooded) | Normal | E1 | N • • o F |

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